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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,845	01/13/2004	Hitoshi Nosaka	9319S-000641	1410

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EXAMINER

ABOAGYE, MICHAEL

ART UNIT PAPER NUMBER

1725

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/756,845

Applicant(s)

NOSAKA, HITOSHI

Examiner

Michael Aboagye

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01/13/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-14 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1- 4 and 7–14 insofar as can be determined in the absence of complete translation of the Japanese document are rejected under 35 U.S.C. 102(b) as being anticipated by Mamoru et al. (JP 3-127844).

3. Regarding claims 1,3,4, and 11, note that Mamoru et al. shows wire bonding method comprising: (a) bonding a tip portion of a wire to a first electrode by pressing an open end section of a first hole of a first tool against the tip portion of the wire that is passed through the first hole and protrudes outside the first hole; and (b) bonding a part of a section of the wire that is lead out from the first electrode to a second electrode, wherein the first tool is passed through a second hole of a second tool, a width of an open end section of the second hole is greater than a width of the open end section of the first hole, and the step (b) is conducted by pressing the open end section of the second hole against the part of the wire. Cutting the wire adjacent to the open end section of the second hole a. A method wherein the first electrode is a pad of a semiconductor chips, and the second electrode is a lead of the package of a semiconductor device. (Fig. 2b, 4 (b and c), and abstract).

4. Regarding claims 2,7,8,9,10 and 12, Mamoru et al. shows a wire bonding method comprising: (a) bonding a tip portion of a wire to a first electrode by pressing an open end section of a first hole of a first tool against the tip portion of the wire that is passed through the first hole and protrudes outside the first hole; and (b) bonding a part of a section of the wire that is lead out from the first electrode to a second electrode, wherein the first tool is passed through a second hole of a second tool, and the step (b) is conducted by pressing the open end section of the first hole and an open end section of the second hole against the part of the wire further comprising cutting the wire adjacent to the open end section of the first hole, feeding out the wire such that the tip portion of the wire protrudes outside the first hole; wherein the open end section of the first hole and the open end section of the second hole define a continuous plane surface when arranged to have an identical height. A method wherein the first electrode is a pad of a semiconductor chips, and the second electrode is a lead of the package of a semiconductor device. (Fig. (1b, 3a & 3b), and abstract).

5. Regarding claim 13, Mamoru et al. shows a wire bonding apparatus comprising: first and second tools for bonding a wire to first and second electrodes, wherein the first tool includes a first hole through which the wire is passed, and an open end section of the first hole that is pressed against a tip portion of the wire that protrudes outside the first hole, and the second tool includes a second hole through which the first tool is passed, and an open end section of the second hole that is pressed against a part of a section of the wire that is led out from the first electrode, wherein the width of the open end section of the second hole is greater than the width of the open end section of the first hole(Fig 2(a & b)).

6. Regarding claim 14, Mamoru et al. shows a wire bonding apparatus comprising: first and second tools for bonding a wire to first and second electrodes, wherein the first tool includes a first hole through which the wire is passed, and an open end section of the first hole that is pressed against a tip portion of the wire that protrudes outside the first hole, and the second tool includes a second hole through which the first tool is passed, and an open end section of the second hole, wherein the open end section of the first hole and the open end section of the second hole are pressed against a part of a section of the wire that is lead out from the first electrode.( Fig 1 (a & b))

***Allowable Subject Matter***

7. Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: the instant application is deemed to be a nonobvious improvement over the invention of Mamoru et al.

8. The improvement in claim 5 comprises cutting the wire after step (b) wherein The next step is conducted in a state in which the open end section of the first hole is disposed above the open end section of the second hole, and the wire is lead out from the first hole to reach an area adjacent to the open end section of the second hole.

9. The improvement in the claim 6 is that, the open end section of the second hole is provide with gradually narrowing taper.

### CONCLUSION

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Komiyama (US Patent no. 6457627) and Lascelles (US Patent no. 4230925) are cited of interest for the illustration of the state of the art in the wire bonding method and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Aboagye whose telephone number is 571-272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 1725

A.M.

A.M.

6/21/05

KEVIN KERNS  
PRIMARY EXAMINER

*Kevin Kerns 6/22/05*